

List of publications

- Alexey P. Kryukov, Kirill A. Kryukov, Bohao Fang, Katherene Collier, Scott Edwards (2024) **“Mitogenomics clarifies the position of the Nearctic magpies (*Pica hudsonia* and *Pica nuttalli*) within the Holarctic magpie radiation”** *Current Zoology*, in press, epub: 1 Nov 2023 (accepted on October 27, 2023), doi: 10.1093/cz/zoad048.
- Kirill Kryukov, So Nakagawa, Tadashi Imanishi (2024) **“GenomeSync: a synchronizable database of genome sequences”** *iDarwin*, vol. 4, 4-23, 13 March 2024.
- So Nakagawa, Toshiaki Katayama, Lihua Jin, Jiaqi Wu, Kirill Kryukov, Rise Oyachi, Junko S. Takeuchi, Takatomo Fujisawa, Satomi Asano, Momoka Komatsu, Jun-ichi Onami, Takashi Abe, Masanori Arita (2023) **“SARS-CoV-2 HaploGraph: visualization of SARS-CoV-2 haplotypes spread in Japan”** *Genes & Genetic Systems*, 2023, 23-00085, October 14, 2023 (accepted on June 10, 2023), doi: 10.1266/ggs.23-00085, Jxiv preprint: <https://jxiv.jst.go.jp/index.php/jxiv/preprint/view/338>.
- Ricky Indra Alfaray, Batsaikhan Saruuljavkhlan, Kartika Afrida Fauzia, Roberto C. Torres, Kaisa Thorell, Selva Rosyta Dewi, Kirill A. Kryukov, Takashi Matsumoto, Junko Akada, Ratha-korn Vilaichone, Muhammad Miftahussurur, Yoshio Yamaoka (2023) **“Global Antimicrobial Resistance Gene Study of *Helicobacter pylori*: Comparison of Detection Tools, ARG and Efflux Pump Gene Analysis, Worldwide Epidemiological Distribution, and Information Related to the Antimicrobial-Resistant Phenotype”** *Antibiotics*, 12(7), 1118, June 28, 2023 (accepted on June 25, 2023), doi: 10.3390/antibiotics12071118.
- Kirill Kryukov, Tadashi Imanishi, So Nakagawa (2023) **“Nanopore sequencing data analysis of 16S rRNA genes using GenomeSync-GSTK system”** *Methods in Molecular Biology*, Vol. 2632, 215-226, 14 February 2023, Kazuharu Arakawa (Eds): Nanopore Sequencing, doi: 10.1007/978-1-0716-2996-3_15, PMID: 36781731, book ISBN: 978-1-0716-2995-6.
- Jianshi Jin, Taisaku Ogawa, Nozomi Hojo, Kirill Kryukov, Kenji Shimizu, Tomokatsu Ikawa, Tadashi Imanishi, Taku Okazaki, Katsuyuki Shiroguchi (2023) **“Robotic data acquisition with deep learning enables cell image-based prediction of transcriptomic states”** *PNAS*, 120(1), e2210283120, 3 Jan 2023, epub: 28 Dec 2022 (accepted on November 30, 2022), doi: 10.1073/pnas.2210283120, PMID: 36577074.
- Alexey P. Kryukov, Oleg A. Goroshko, Vladimir Y. Arkhipov, Yaroslav A. Red'kin, Sang-im Lee, Beatriz A. Dorda, Kirill A. Kryukov, Martin Kapun, Elisabeth Haring (2022) **“Introgression at the emerging secondary contact zone of magpie *Pica pica* subspecies: integrating data on nuclear and mitochondrial markers, vocalizations and field observations”** *Organisms Diversity & Evolution*, 22(4), 1037-1064, Dec 2022, epub: 29 July 2022 (accepted: 23 May 2022), doi: 10.1007/s13127-022-00568-6.
- Guangwei Cui, Akihiro Shimba, Taisaku Ogawa, Jianshi Jin, Hitoshi Miyachi, Shinya Abe, Takuma Asahi, Shizue Tani-ichi, Johannes M. Dijkstra, Kirill Kryukov, Daichi Takami, Yuanbo Zhu, Takahiro Hara, Satsuki Kitano, Yan Xu, Keishi Miyata, Takashi Kanaya, Yuichi Oike, Tadashi Imanishi, Hiroshi Ohno, Toshiaki Ohteki, Nagahiro Minato, Masato Kubo, Georg A. Hollander, Katsuyuki Shiroguchi, Koichi Ikuta (2022) **“A circulating subset of iNKT cells mediates antitumor and antiviral immunity”** *Science Immunology*, 7(26), eabj8760, 28 Oct 2022, epub: 21 Oct 2022, doi: 10.1126/sciimmunol.abj8760, PMID: 36269840.
- Kirill Kryukov, Lihua Jin, So Nakagawa (2022) **“Efficient compression of SARS-CoV-2 genome data using Nucleotide Archival Format (NAF)”** *Patterns*, 3(9), 100562, 9 September 2022, epub: 6 July 2022 (accepted: 1 July 2022), doi: 10.1016/j.patter.2022.100562, PMID: 35818472.

- Rumiko Suzuki, Naruya Saitou, Osamu Matsuuri, Seiji Shiota, Takashi Matsumoto, Junko Akada, Nagisa Kinjo, Fukunori Kinjo, Kuniko Teruya, Makiko Shimoji, Akino Shiroma, Mototsugu Kato, Kazuhito Satou, Takashi Hirano, Masahiro Asaka, Kirill Kryukov, Yoshan Moodley, Yoshio Yamaoka (2022) “***Helicobacter pylori* genomes reveal Paleolithic human migration to the east end of Asia**” *iScience*, **25**, 7, 104477, 15 July 2022, epub: 30 May 2022 (accepted: 27 May 2022), doi: 10.1016/j.isci.2022.104477, PMID: 35720267.
- Shinnosuke Komiya, Yoshiyuki Matsuo, So Nakagawa, Yoshiharu Morimoto, Kirill Kryukov, Hidetaka Okada, Kiichi Hirota (2022) “**MinION™, a portable long-read sequencer, enables rapid vaginal microbiota analysis in a clinical setting**” *BMC Medical Genomics*, **15**, 68, 25 March 2022, doi: 10.1186/s12920-022-01218-8, PMID: 35337329.
- Yoshiki Shiraishi, Kirill Kryukov, Katsuyoshi Tomomatsu, Fumio Sakamaki, Shigeaki Inoue, So Nakagawa, Tadashi Imanishi, Koichiro Asano (2021) “**Diagnosis of pleural empyema/parapneumonic effusion by next-generation sequencing**” *Infectious Diseases*, **53**(6), 450-459, epub: 9 March 2021, doi: 10.1080/23744235.2021.1892178, PMID: 33689538.
- Ayumu Ohno, Kazuo Umezawa, Satomi Asai, Kirill Kryukov, So Nakagawa, Hayato Miyachi, Tadashi Imanishi (2021) “**Rapid profiling of drug-resistant bacteria using DNA-binding dyes and a nanopore-based DNA sequencer**” *Scientific Reports*, **11**, 3436, 9 February 2021, doi: 10.1038/s41598-021-82903-z, PMID: 33564026.
- Yoshiyuki Matsuo, Shinnosuke Komiya, Yoshiaki Yasumizu, Yuki Yasuoka, Katsura Mizushima, Tomohisa Takagi, Kirill Kryukov, Tadashi Imanishi, Aisaku Fukuda, Yoshiharu Morimoto, Yuji Naito, Hidetaka Okada, Hidemasa Bono, So Nakagawa, Kiichi Hirota (2021) “**Full-length 16S rRNA gene amplicon analysis of human gut microbiota using MinION™ nanopore sequencing confers species-level resolution**” *BMC Microbiology*, **21**(1), 35, 26 January 2021, doi: 10.1186/s12866-021-02094-5, PMID: 33499799.
- Yasuko Orba, Keita Matsuno, Ryo Nakao, Kirill Kryukov, Yumi Saito, Fumihiko Kawamori, Ariel Loza Vega, Tokiko Watanabe, Tadashi Maemura, Michihito Sasaki, William W. Hall, Roy A. Hall, Juan Antonio Pereira, So Nakagawa, Hirofumi Sawa (2021) “**Diverse Mosquito Specific Flaviviruses in the Bolivian Amazon basin**” *Journal of General Virology*, **102**(3), 001518, epub: 8 Jan 2021, doi: 10.1099/jgv.0.001518, PMID: 33416463.
- Alexey P. Kryukov, Liudmila N. Spiridonova, Alexey P. Tyunin, Kirill A. Kryukov, Beatriz A. Dorda (2020) “**Complete mitochondrial genomes of five subspecies of the Eurasian magpie *Pica pica*, obtained with Oxford Nanopore MinION, and their interpretation regarding intraspecific taxonomy**” *Mitochondrial DNA part B*, **5**(3), 3792-3793, 20 November 2020, doi: 10.1080/23802359.2020.1838354, PMID: 33367109.
- Mahoko Takahashi Ueda, Kirill Kryukov, Satomi Mitsuhashi, Hiroaki Mitsuhashi, Tadashi Imanishi, So Nakagawa (2020) “**Comprehensive genomic analysis reveals dynamic evolution of endogenous retroviruses that code for retroviral-like protein domains**” *Mobile DNA*, **11**, 29, 17 September 2020, doi: 10.1186/s13100-020-00224-w, PMID: 32963593.
- Kirill Kryukov, Mahoko Takahashi Ueda, So Nakagawa, Tadashi Imanishi (2020) “**Sequence Compression Benchmark (SCB) database — a comprehensive evaluation of reference-free compressors for FASTA-formatted sequences**” *GigaScience*, **9**(7), g1aa072, 6 July 2020, doi: 10.1093/gigascience/g1aa072, PMID: 32627830.
- Toru Ishihara, Nobuo Watanabe, Shigeaki Inoue, Hiromichi Aoki, Tomoatsu Tsuji, Bunsei Yamamoto, Hidetaka Yanagi, Masayuki Oki, Kirill Kryukov, So Nakagawa, Sadaki Inokuchi, Hideki Ozawa, Tadashi Imanishi (2020) “**Usefulness of next-generation DNA sequencing for the diagnosis of urinary tract infection**” *Drug Discoveries & Therapeutics*, **14**(1), 42-49, 2020, doi: 10.5582/ddt.2020.01000, PMID: 32101813.
- Yahiro Mukai, Yuriko Tomita, Kirill Kryukov, So Nakagawa, Makoto Ozawa, Tsutomu Matsui,

Keizo Tomonaga, Tadashi Imanishi, Yoshihiro Kawaoka, Tokiko Watanabe, Masayuki Horie (2019) **“Identification of a distinct lineage of aviadenvirus from crane feces”** *Virus Genes*, **55**(6), 815-824, December 2019 (epub: 23 September 2019), doi: 10.1007/s11262-019-01703-w, PMID: 31549291.

So Nakagawa, Shigeaki Inoue, Kirill Kryukov, Junya Yamagishi, Ayumu Ohno, Kyoko Hayashida, Ruth Nakazwe, Mox Kalumbi, Darlington Mwenya, Nana Asami, Chihiro Sugimoto, Mable M. Mutengo, Tadashi Imanishi (2019) **“Rapid sequencing-based diagnosis of infectious bacterial species from meningitis patients in Zambia”** *Clinical & Translational Immunology*, **8**(11), e01087, 5 November 2019, doi: 10.1002/cti2.1087, PMID: 31709051.

Kirill Kryukov, Mahoko Takahashi Ueda, So Nakagawa, Tadashi Imanishi (2019) **“Nucleotide Archival Format (NAF) enables efficient lossless reference-free compression of DNA sequences”** *Bioinformatics*, **35**(19), 3826-3828, 1 October 2019, doi: 10.1093/bioinformatics/btz144, PMID: 30799504.

Hideaki Kanzawa-Kiriyama, Timothy A. Jinam, Yosuke Kawai, Takehiro Sato, Kazuyoshi Hosomichi, Atsushi Tajima, Noboru Adachi, Hirofumi Matsumura, Kirill Kryukov, Naruya Saitou, Ken-ichi Shinoda (2019) **“Late Jomon male and female genome sequences from the Funadomari site in Hokkaido, Japan”** *Anthropological Science*, **127**(2), 83-108, 29 May 2019, doi: 10.1537/ase.190415.

Hiromasa Tanaka, Yoshiyuki Matsuo, So Nakagawa, Kenichiro Nishi, Akihisa Okamoto, Shinichi Kai, Teppei Iwai, Yoshiteru Tabata, Takeshi Tajima, Yuji Komatsu, Motohiko Satoh, Kirill Kryukov, Tadashi Imanishi, Kiichi Hirota (2019) **“Application of the MinION™ portable DNA sequencer in clinical microbiology evaluation: a case report”** *JA Clinical Reports*, **5**, 24, 19 March 2019, doi: 10.1186/s40981-019-0244-z.

Shinichi Kai, Yoshiyuki Matsuo, So Nakagawa, Kirill Kryukov, Shino Matsukawa, Hiromasa Tanaka, Teppei Iwai, Tadashi Imanishi, Kiichi Hirota (2019) **“Rapid bacterial identification by direct PCR amplification of 16S rRNA genes using the MinION™ nanopore sequencer”** *FEBS Open Bio*, **9**(3), 548-557, March 2019 (epub: 29 January 2019), doi: 10.1002/2211-5463.12590, PMID: 30868063.

Kirill Kryukov, Mahoko Takahashi Ueda, Tadashi Imanishi, So Nakagawa (2019) **“Systematic survey of non-retroviral virus-like elements in eukaryotic genomes”** *Virus Research*, **262**, 30-36, March 2019 (epub: 6 February 2018), doi: 10.1016/j.virusres.2018.02.002, PMID: 29425804.

Nobuo Watanabe, Kirill Kryukov, So Nakagawa, Junko S. Takeuchi, Meiko Takeshita, Yukiko Kirimura, Satomi Mitsuhashi, Toru Ishihara, Hiromichi Aoki, Sadaki Inokuchi, Tadashi Imanishi, Shigeaki Inoue (2018) **“Detection of pathogenic bacteria in the blood from sepsis patients using 16S rRNA gene amplicon sequencing analysis”** *PLoS One*, **13**(8), e0202049, 15 August 2018, doi: 10.1371/journal.pone.0202049, PMID: 30110400.

Taisaku Ogawa, Kirill Kryukov, Tadashi Imanishi, Katsuyuki Shiroguchi (2017) **“The efficacy and further functional advantages of random-base molecular barcodes for absolute and digital quantification of nucleic acid molecules”** *Scientific Reports*, **7**(1), 13576, 19 October 2017, doi: 10.1038/s41598-017-13529-3, PMID: 29051542.

Mari Tenno, Katsuyuki Shiroguchi, Sawako Muroi, Eiryō Kawakami, Keita Koseki, Kirill Kryukov, Tadashi Imanishi, Florent Ginhoux, Ichiro Taniuchi (2017) **“Cbfβ2 deficiency preserves Langerhans cell precursors by lack of selective TGFβ receptor signaling”** *Journal of Experimental Medicine*, **214**(10), 2933-2946, 2 October 2017, doi: 10.1084/jem.20170729, PMID: 28814567.

Satomi Mitsuhashi, Kirill Kryukov, So Nakagawa, Junko S. Takeuchi, Yoshiki Shiraishi, Koichiro Asano, Tadashi Imanishi (2017) **“A portable system for rapid bacterial composition analysis”**

using a nanopore-based sequencer and laptop computer” *Scientific Reports*, 7(1), 5657, 18 July 2017, doi: 10.1038/s41598-017-05772-5, PMID: 28720805.

Hideaki Kanzawa-Kiriyama, Kirill Kryukov, Timothy A. Jinam, Kazuyoshi Hosomichi, Aiko Saso, Gen Suwa, Shintaroh Ueda, Minoru Yoneda, Atsushi Tajima, Ken-ichi Shinoda, Ituro Inoue, Naruya Saitou (2017) **“A partial nuclear genome of the Jomons who lived 3000 years ago in Fukushima, Japan”** *Journal of Human Genetics*, 62(2), 213–221, February 2017, doi: 10.1038/jhg.2016.110, PMID: 27581845.

Kirill Kryukov, Tadashi Imanishi (2016) **“Human Contamination in Public Genome Assemblies”** *PLoS One*, 11(9), e0162424, 9 September 2016, doi: 10.1371/journal.pone.0162424, PMID: 27611326.

Nilmini Hettiarachchi, Kirill Kryukov, Kenta Sumiyama, Naruya Saitou (2014) **“Lineage specific conserved noncoding sequences of plant genomes: their possible role in nucleosome positioning”** *Genome Biol. Evol.*, 6(9), 2527-2542, 5 September 2014, doi: 10.1093/gbe/evu188, PMID: 25364802.

Kirill Kryukov, Kenta Sumiyama, Kazuho Ikeo, Takashi Gojobori, Naruya Saitou (2012) **“A new database (GCD) on genome composition for eukaryote and prokaryote genome sequences and their initial analyses”** *Genome Biol. Evol.*, 4(4), 501-512, 14 March 2012, doi: 10.1093/gbe/evs026, PMID: 22417913.

Kirill Kryukov, Naruya Saitou (2010) **“MISHIMA - a new method for high speed multiple alignment of nucleotide sequences of bacterial genome scale data”** *BMC Bioinformatics*, 11, 142, 18 March 2010, doi: 10.1186/1471-2105-11-142, PMID: 20298584.

Mahoko Takahashi, Kirill Kryukov, Naruya Saitou (2009) **“Estimation of bacterial species phylogeny through oligonucleotide frequency distances”** *Genomics*, 93(6), 525-533, June 2009, doi: 10.1016/j.ygeno.2009.01.009, PMID: 19442633.

Lihua Jin, Kirill Kryukov, Yoshiyuki Suzuki, Tadashi Imanishi, Kazuho Ikeo, Takashi Gojobori (2009) **“The evolutionary study of small RNA-directed gene silencing pathways by investigating RNase III enzymes”** *Gene*, 435(1-2), 1-8, 15 April 2009, doi: 10.1016/j.gene.2008.12.022, PMID: 19393176.

Lihua Jin, Kirill Kryukov, Jose C. Clemente, Tomoyoshi Komiyama, Yoshiyuki Suzuki, Tadashi Imanishi, Kazuho Ikeo, Takashi Gojobori (2008) **“The evolutionary relationship between gene duplication and alternative splicing”** *Gene*, 427(1-2), 19-31, 31 December 2008, doi: 10.1016/j.gene.2008.09.002, PMID: 18835337.

Kirill Kryukov, Naruya Saitou (2003) **“Netview: application software for constructing and visually exploring phylogenetic networks”** *Genome Informatics*, 14, 280-281, journal website: <http://www.jsbi.org/pdfs/journal1/GI14.html>, published in: M. Gribskov, M. Kanehisa, S. Miyano, and T. Takagi (eds.) "Genome Informatics 2003" Universal Academy Press, Tokyo, 2003.